### INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/003516

A. CLASSIFICATION OF SUBJECT MATTER Int. Cl<sup>7</sup> F16D41/08, 48/06

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIBLDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>2</sup> F16D41/08, 48/00-48/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 11-159545 A (NTN Corp.),	1,3,5,6
A	15 June, 1999 (15.06.99), Claims; Fig. 5	2,4,7-15
Y	JP 1-158230 A (Nippondenso Co., Ltd.),	1,3,5,6
A	21 June, 1989 (21.06.89), Claims; Fig. 3	2,4,7-15
A	JP 2003-285659 A (NTN Corp.), 07 October, 2003 (07.10.03), Claims	1-15
A	JP 11-157355 A (NTN Corp.), 15 June, 1999 (15.06.99), Full text; all drawings	1-15

See patent family annex.

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- "&" document member of the same patent family

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## INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2005/003516

(Continuation	). DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2001-311438 A (NTN Corp.), 09 November, 2001 (09.11.01), Full text; all drawings	1-15
A	JP 62-171530 A (Hitachi, Ltd.), 28 July, 1987 (28.07.87), Full text; all drawings	1-15
А	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 198688/1986(Laid-open No. 104119/1988) (Isuzu Motors Ltd.), 06 July, 1988 (06.07.88), Full text; all drawings	1-15
A	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 74156/1986(Laid-open No. 185926/1987) (Kaneko Agricultural Machinery Co., Ltd.), 26 November, 1987 (26.11.87), Full text; all drawings	1-15

# INTERNATIONAL SEARCH REPORT Information on patent family members

International application No. PCT/JP2005/003516

JP 11-159545 A	1999.06.15	US 6123183 A DE 19854224 A1	2000.09.26 1999.05.27
JP 1-158230 A	1989.06.21	(Family: none)	
JP 2003-285659 A	2003.10.07	(Family: none)	
JP 11-157355 A	1999.06.15	US 6035988 A	2000.03.14
JP 2001-311438 A	2001.11.09	(Family: none)	
JP 62-171530 A	1987.07.28	(Family: none)	
JP 63-104119 U	1988.07.06	(Family: none)	
JP 62-185926 U	1987.11.26	(Family: none)	